

**MONTANA DEPARTMENT OF ENVIRONMENTAL QUALITY
OPERATING PERMIT TECHNICAL REVIEW DOCUMENT**

**Permitting and Compliance Division
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**Smurfit-Stone Container Enterprises, Inc.
NW1/4 of Section 24, Township 14 North, Range 21 West in Missoula County
P.O. Box 4707
14377 Pulp Mill Road
Missoula, MT 59806-4707**

The following table summarizes the air quality programs testing, monitoring, and reporting requirements applicable to this facility.

Facility Compliance Requirements	Yes	No	Comments
Source Tests Required	X		Methods 1-4, 5, 7, 8, 9, and MACT testing
Ambient Monitoring Required	X		
COMS Required	X		
CEMS Required	X		TRS, H ₂ S, NO _x , SO ₂ and O ₂
Schedule of Compliance Required		X	
Annual Compliance Certification and Semiannual Reporting Required	X		
Monthly Reporting Required	X		
Quarterly Reporting Required	X		
Applicable Air Quality Programs			
ARM Subchapter 7 Preconstruction Permitting	X		Montana Air Quality Permit #2589-13
New Source Performance Standards (NSPS)	X		40 CFR 60, Subparts D and BB
National Emission Standards for Hazardous Air Pollutants (NESHAPS)	X		40 CFR 61, Subpart M
Maximum Achievable Control Technology (MACT)	X		40 CFR 63, Subpart S and MM
Major New Source Review (NSR) - includes Prevention of Significant Deterioration (PSD) and/or Non-Attainment Area (NAA) NSR	X		
Risk Management Plan Required (RMP)		X	
Acid Rain Title IV		X	
Compliance Assurance Monitoring (CAM)	X		Appendix E of Operating Permit #OP2589-05
State Implementation Plan (SIP)	X		General SIP

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SECTION I. GENERAL INFORMATION

A. Purpose

This document establishes the basis for the decisions made regarding the applicable requirements, monitoring plan, and compliance status of emissions units affected by the operating permit proposed for this facility. The document is intended for reference during review of the proposed permit by the U.S. Environmental Protection Agency (EPA) and the public. It is also intended to provide background information not included in the operating permit and to document issues that may become important during modifications or renewals of the permit. Conclusions in this document are based on information provided in the original application submitted by Stone Container Corporation (Stone) on June 7, 1996; additional information submitted on April 7, 2000; administrative amendment requests submitted on December 18, 2001, March 8, 2004, and October 1, 2004; a significant modification request submitted by Smurfit-Stone Container Enterprises, Inc. (Smurfit-Stone) on September 30, 2005; a renewal application submitted on June 9, 2006; a request for applicability of Appendix F to the mill's continuous emissions monitoring systems (CEMS) submitted on September 14, 2007; a request to change the responsible official submitted on May 16, 2008; a request to discontinue ambient monitoring of particulate matter with an aerodynamic diameter of 10 microns or less (PM₁₀) submitted on May 12, 2008 and July 14, 2008; and various de minimis notifications submitted since the issuance of the current operating permit (OP2589-03).

B. Facility Location

Smurfit-Stone's Missoula Mill is located at 14377 Pulp Mill Road in Missoula, Montana, which is close to Frenchtown, Montana, 10 miles northwest of Missoula. The legal location of the facility is the NW ¼ of Section 24, Township 14 North, Range 21 West in Missoula County, Montana.

C. Facility Background Information

Preconstruction Permit History

Stone underwent a major expansion during the mid-1970s, which added several New Source Performance Standards (NSPS) units. The basic plant capacity was designed for about 1,850 tons per day of air-dried pulp. Separate air quality permits covered individual units at that time. Two substantial production changes to the permit were made since that time. In 1987, the permit was revised to allow Stone to burn petroleum coke in all four lime kilns. In 1989, the permit was revised again to allow Stone to install and operate a recycled cardboard facility at the plant. This revision increased the capacity of the plant by approximately 400 air-dried tons per day.

On July 1, 1987, the EPA promulgated new ambient air quality standards for PM₁₀. The annual standard is 50 micrograms per cubic meter and the 24-hour standard is 150 micrograms per cubic meter. These standards were adopted by the Montana Board of Health and Environmental Sciences on April 15, 1988. Due to violations of these standards, Missoula was designated as a PM₁₀ nonattainment area. As a result of this designation, the Montana Department of Health and Environmental Sciences and the Missoula County Air Pollution Control Agency were required to develop a plan to control these emissions and bring the area into compliance with the federal and state ambient air quality standards.

In order to identify the emission sources contributing to the violation of the PM₁₀ standard, Missoula County conducted a chemical mass balance study (CMB) of the area. Stone's recovery boilers were identified as significant contributors to this area. **Permit #2589-M** was a modification to add general fugitive dust control measures to this facility, and to correct emission limitations for the #5 Recovery Boiler and the #4 Lime Kiln to agree with NSPS limits. These corrections decreased the allowable emissions enough to satisfy the State Implementation Plan (SIP) control plan for the area.

Stone requested an alteration to their permit to allow for the installation of a new Fiber Optimization and Raw Material Management (FORMM) System. This permit allowed the construction of the new screening room and the addition of the needed fugitive sources to allow Stone to better use the raw materials available and was given **Permit #2589-02**.

In August of 1992, the EPA submitted comments on the Missoula SIP concerning a completeness determination and requesting additional information. In response to EPA's concern about the correlation between opacity and mass emissions, the Air Quality Division modified Stone's permit to clarify the language in the permit. The Air Quality Division also addressed the opacity requirements for the equipment at Stone and the opacity monitor range for the #5 Recovery Boiler. This permit was given **Permit #2589-03**.

In April 1994, Stone applied for **Permit #2589-04** that allowed Stone to make a change in the existing FORMM system. The FORMM transfers the fines from the chip screens and the fines from the sawdust screens to the hog fuel pile. This alteration allowed Stone to transfer material from the FORMM, via an enclosed belt conveyor, to an enclosed storage bin rather than to the hog fuel pile. This material could then be transferred to trucks for distribution off site. To accomplish this, Stone needed to construct a storage bin, a storage bin unloading system, and an enclosed belt conveying system. This proposed system and the existing system can not be physically operated at the same time, but rather can be operated interchangeably. This alteration resulted in a net decrease in total particulate emissions of 44.09 tons per year (TPY) and a net decrease in PM₁₀ emissions of 15.89 TPY. There was an emission decrease because the material is conveyed by an enclosed conveyor into an enclosed storage bin.

In addition to the change in the FORMM system, the permit also reflected the fact that in June 1992, Stone replaced the existing #2 Lime Slaker with a larger lime slaker. The new #2 Lime Slaker has a maximum capacity of 550 gallons per minute (gpm) of green liquor and is controlled by a natural draft wet scrubber. The new #2 Lime Slaker has the same permit limits as the previous slaker. Emissions from the new slaker are also expected to be similar to the old slaker. Even though the new slaker is slightly larger than the old slaker, the emissions did not increase since the vapor velocity in the new slaker was lower than the vapor velocity of the old slaker.

On March 24, 1995, Stone applied for **Permit #2589-05** that would allow Stone to utilize dewatered sludge from the sludge dewatering facility as fuel for the existing waste fuel and hog fuel boilers at the facility. The dewatered sludge was very similar in nature to hog fuel with the exception that a lab analysis conducted on the sludge indicated the sludge contains approximately 0.178% sulfur and 1,420 milligrams per kilogram (mg/kg) of chloride (dry weight basis). Stone supplied the Department of Environmental Quality (Department) with additional information indicating the sulfur content of the dewatered sludge may be as high as 0.4%. The maximum rated output from the sludge dewatering facility is 60 tons per day. Both boilers have an alkaline scrubber for control; therefore, this change in fuel would result in a maximum actual emission increase of 17.5 TPY of SO₂. Stone still had to comply with the existing facility-wide SO₂ limit of 5,000 pounds per day (lb/day). There was no increase in emissions of oxides of nitrogen (NO_x), total suspended particulate (TSP), PM₁₀, carbon monoxide (CO), or volatile organic compounds (VOCs) as a result of this change in fuel. Permit #2589-05 replaced Permit #2589-04.

Once the Department issued its Preliminary Determination (PD) on Stone's permit application, the Department received extensive comments on the proposal. The majority of the comments were received from the Missoula City-County Health Department asking the Department to regulate the hog fuel and waste fuel boilers as incinerators and to require a health risk analysis to determine if there would be any adverse health impacts from dioxin/furan emissions from this proposal as well as from the June 14, 1989, permit that allowed Stone to burn old corrugated cardboard (OCC) rejects in these boilers. In response to these comments, the Department performed an extensive review of the incinerator definition and of the potential health impacts of dioxin/furan emissions from this proposal.

The Department concluded that these boilers do not fit the definition of an incinerator and because there would be no increase in dioxin/furan emissions at Stone's facility from this proposal, this permitting action would not result in an adverse impact to human health or the environment. Also, Stone was limited to 15.1 tons per day of OCC rejects from this project. The Department reported these findings at a meeting of the Missoula Air Pollution Control Board on June 15, 1995, and Permit #2589-05 was issued final on July 2, 1995.

Permit #2589-06 was issued on February 25, 1996, and allowed Stone to replace the existing third press in the #3 Paper Machine with a shoe press. The change increased the quality of the liner board produced and allowed the machine to be operated at a higher production rate, from the current capacity of 59.6 tons of air-dried pulp per hour to 64.8 tons air-dried pulp per hour. The permit alteration also limited the yearly production of the #3 Paper Machine. Minor wording changes were also made to the permit at the request of Stone. A more detailed description of the change is included in the analysis for Permit #2589-06.

On June 7, 1996, Stone was issued **Permit #2589-07** for modifications to the existing scrubbing system on the #4 Smelt Dissolver. A venturi scrubber was added prior to the current scrubber and the internal design and packing of the current scrubber was modified. The allowable emissions from the dissolver did not change as a result of this action; however, because the new system operates with an increased efficiency, actual particulate emissions from the dissolver were expected to decrease by 9 TPY.

The scrubber system modification was scheduled to be completed in two phases. Phase I consisted of modifications to the existing scrubber, including replacing the current packing with structured packing, reinforcing the shell to allow for the higher vacuum required for the operation of the venturi scrubber, and installing new mist eliminators and spray bars. After completion of Phase I, the efficiency of the scrubber would be comparable to the existing unmodified scrubber. Phase II of the project consisted of installing the additional venturi scrubber upstream of the modified scrubber. The addition of the venturi scrubber was expected to increase the efficiency of the system and result in a decrease in actual emissions.

Permit #2589-07 allowed Stone to modify the scrubbing system on the #4 Smelt Dissolver. The scrubber was a packed tower design, using an alkaline solution as the scrubbing liquid. Scale and particulate build-up on the existing packing caused channeling in the scrubber, which decreased the efficiency of the system. Acid cleaning to remove the scale was needed up to three times a year. The modifications to the scrubber system changed the internal design and packing of the original scrubber and installed a venturi scrubber prior to the modified scrubber. The proposed scrubber system would reduce the need for acid cleaning as well as provide increased particulate removal efficiency. Based on the manufacturer's specifications, actual particulate emissions from the #4 Dissolver would decrease by approximately 9 TPY.

After issuance of the PD on May 2, 1996, it was determined that installation of a more efficient control device did not warrant increasing the operational monitoring requirements. The Department determined that the existing requirement to monitor scrubber operation weekly, along with annual stack testing, was sufficient to ensure compliance with emission limitations. The scrubber monitoring requirements specified in the PD for MAQP #2589-07 were deleted. Reporting requirements for the dates of construction of the scrubber modification were also added. Permit #2589-07 replaced Permit #2589-06.

On February 27, 2000, Stone was issued **Permit #2589-08** for the operation of a thermal oxidizer and steam stripper that would be installed as part of the Maximum Achievable Control Technology (MACT) I Cluster Rule requirements. Stone is subject to 40 CFR 63, Subpart S (MACT I), for the pulp and paper industry. In order to comply with the regulations, Stone proposed to install and operate a steam stripper and a thermal oxidizer. A steam stripper would be installed to reduce air

emissions by removing potential pollutants from segregated high methanol condensates. The steam stripper would replace the current air stripper. The thermal oxidizer would be installed for combustion of stripper off gasses (SOG) and low-volume high-concentration (LVHC) gases from the digester, black liquor evaporator, and turpentine recovery systems.

The Department also approved the project as a pollution control project (PCP) under the Prevention of Significant Deterioration (PSD) regulations. The Department reviewed the project and the 1994 EPA memo entitled Pollution Control Projects and New Source Review (NSR) Applicability. The Department determined that the project would be environmentally beneficial. The potential emissions for NO_x were determined to exceed the significance levels under the PSD regulations. Stone conducted modeling based on these results to determine the impacts of the NO_x emissions. The Department reviewed the modeling results, along with previous modeling completed by Stone. The Department determined the thermal oxidizer would not cause or contribute to a violation of the National Ambient Air Quality Standards (NAAQS), PSD increment, or adversely affect visibility or other air quality related values.

The two substantive requirements that Stone was required to meet to have an approved PCP is (1) have Departmental approval that the project is a PCP, and (2) provide the public the opportunity to comment. The Department agreed that the project is a PCP and the public would be allowed to comment during the issuance of the PD.

Conditions contained in the permit were added as a result of the permitting action on Permit #2589-08. The project also included other activities, such as construction of the LVHC- non-condensable gas (NCG) system and re-configuration of the batch digester vent. Also, the permit format and the rule references were updated as well as an update to conditions in which the Administrative Rules of Montana (ARM) 17.8.321 Kraft Pulp Mills applies. Permit #2589-08 replaced Permit #2589-07.

Stone submitted a complete permit application on December 27, 2000, for the installation and operation of seven temporary, diesel-fired generators at their facility. This application was assigned **Permit #2589-09**. Stone asserted that the generators were necessary because the high cost of electricity had significantly impacted operations at Stone, forcing a reduction in manufacturing at the Frenchtown facility. The operation of the generators would not occur beyond 2 years and was not expected to last for an extended period of time, but rather only for the length of time necessary for Stone to acquire a permanent, more economical supply of power. Integral to the diesel generators are the electronic engine controls (EEC) and intake air cooling (IAC) for NO_x emission control.

The temporary generators would only be used when commercial power was too expensive and was impacting mill operations; therefore, the amount of emissions expected during the actual operation of these generators was not anticipated to be major. In addition, the installation of these generators qualifies as a "temporary source" under the PSD permitting program because the permit would limit the operation of these generators to a time period of less than 2 years. As a result, Stone would not need to comply with ARM 17.8.804, 17.8.820, 17.8.822, and 17.8.824. Even though the portable generators were considered temporary, the Department required compliance with best available control technology (BACT) and public notice requirements; therefore, compliance with ARM 17.8.819 and 17.8.826 would be ensured. In addition, Stone was responsible for complying with all applicable ambient air quality standards. Permit #2589-09 replaced Permit #2589-08.

The Department received comments on the PD. The comments generally asserted that the BACT analysis was incomplete or inadequate, asserted that the Environmental Assessment (EA) performed was incomplete or inadequate, requested either operational or emission controls be applied to the temporary generators, and stated that modeling should be conducted prior to permit issuance to assure compliance with ambient air quality standards.

The Department did perform modeling prior to issuing the PD on January 3, 2001, which demonstrated that emissions from the operation of the proposed temporary generators, at maximum potentials, would

not violate either the NAAQS or the Montana Ambient Air Quality Standards (MAAQS). The Department performed additional modeling using a refined model (ISC3) and 5 years of Missoula Meteorological data. The refined modeling also predicted compliance with both the NAAQS and the MAAQS standards at the maximum potential emissions of the proposed generators.

The Department updated the EA to address comments received on the PD. The revised EA expanded the discussion of Air Quality and Human Health, to acknowledge the modeling conducted prior to issuance of the PD and the refined modeling that followed. In addition, the Department expanded the BACT analysis in response to the comments. Permit #2589-09 was not included in the Title V operating permit because it addressed temporary sources.

Montana Air Quality Permit (MAQP) #2589-10 was issued on September 9, 2003, for the proposed installation of a replacement chip-meter and low-pressure feeder for Stone's existing Chip Kamyr digester (Kamyr). Stone proposed changes to the chip bin to allow installation of the replacement chip-meter. The replacement of Kamyr's chip meter would allow that digester to increase its production. Stone intended to increase production of the Kamyr, while curtailing the other digesters. If such an increase in production were to be evaluated with respect to the full potential utilization of the other digesters with the Kamyr, a PSD review may be required. To ensure that the Kamyr project would not increase Stone's potential emissions above the PSD significance level, Stone proposed a mill-wide limitation of 535,000 oven dry tons (ODT) of wood pulp production per year. The Kamyr, when compared with the combined production of the digester systems, produces the highest pulp quality at the highest pulp yield and uses the least steam per ton of pulp, resulting less black liquor solids generation per ton of pulp. Therefore, actual emissions resulting from the implementation of this project were expected to decrease.

Potential emissions for the 535,000 ODT of wood pulp production per year were calculated using emission factors for the Kamyr digester alone, as this represents the most likely scenario. However, Stone retains the ability to operate the other digesters as they are currently permitted, whether alone, or in combination with the Kamyr. MAQP #2589-10 replaced MAQP #2589-09.

Stone submitted a request for a permit amendment on December 12, 2002, to make the MAQP #2589-10 consistent with the Title V operating permit #OP2589-01. In addition, Stone submitted de minimis requests on April 21, 2003; August 8, 2003; and September 10, 2003, which were incorporated into the MAQP. **MAQP #2589-11** replaced MAQP #2589-10.

Smurfit-Stone submitted a request for a permit amendment on October 1, 2004, of MAQP #2589-11. Smurfit-Stone requested a name change from Stone to Smurfit-Stone. **MAQP #2589-12** replaced MAQP #2589-11.

On October 3, 2005, the Department received a request from Smurfit-Stone to amend MAQP #2589-12 according to the provisions of ARM 17.8.745. Smurfit-Stone is required to comply with the high volume, low concentration (HVLC)-NCG requirements in 40 CFR 63, Subpart S, National Emissions Standards for Hazardous Air Pollutants for the Pulp and Paper Industry (commonly referred to as MACT I, Phase II). MACT I Phase II requires collection and treatment of emissions from specified HVLC-NCG sources. The compliance date for the HVLC-NCG (MACT I, Phase II) requirements was April 17, 2006. The change to MAQP #2589-12 was to remove the requirement to vent the brown stock washer emissions through wet scrubbers. Because of the design features of the new low-infiltration hoods, and the large, wet particle configuration of any airborne fiber that would be generated by the operation of the air doctors, the particulate emissions from the washer hoods entering the HVLC system, although not quantified, is expected to be insignificant. This would be the case both during operation of the HVLC-NCG collection system and during malfunctions of the HVLC-NCG collections system when the emissions from the washers are being vented to the atmosphere. Therefore, Smurfit-Stone believes, once the new hoods are installed, the requirement to operate wet scrubbers to control particulate emissions from the washers should be removed. **MAQP #2589-13** replaced MAQP #2589-12.

Title V Operating Permit History

On December 11, 2001, Stone was issued **Operating Permit #OP2589-00** for the operation of the mill. This was the original Title V operating permit issued for the facility.

On December 18, 2001, Stone submitted a request to modify Operating Permit #OP2589-00. The changes were categorized as typographical and corrections that were agreed upon during the proposed stage of Operating Permit #OP2589-00 and discussed in the technical review document, but were not made in the permit. Operating Permit #OP2589-01 became final and effective on January 22, 2002. **Operating Permit #OP2589-01** replaced Operating Permit #OP2589-00.

On March 8, 2004, Stone submitted a request for an administrative amendment to add an alternate responsible official. William Kohl, Operations Manager, fits the definition of "Responsible Official" listed in ARM 17.8.1201(29) and has been listed in addition to Robert Boschee, General Manager in Operating Permit #OP2589-02. Operating Permit #OP2589-02 became final and effective on May 11, 2004. **Operating Permit #OP2589-02** replaced Operating Permit #OP2589-01.

On October 5, 2004, Smurfit-Stone submitted a request to change the corporate name from Stone Container Corporation to Smurfit-Stone Container Enterprises, Inc. The legal entity owning and operating the Missoula Mill did not change, and no changes in management, environmental personnel or daily operations at the Mill occurred as a result of the consolidation which triggered the name change. **Operating Permit #OP2589-03** replaced Operating Permit #OP2589-02.

D. Current Permit Action

On October 3, 2005, the Department received an application from Smurfit-Stone for a significant modification to operating permit #OP2589-03. This application was assigned **Operating Permit #OP2589-04**. Smurfit-Stone must comply with the HVLC-NCG requirements in 40 CFR 63, Subpart S, National Emissions Standards for Hazardous Air Pollutants for the Pulp and Paper Industry (commonly referred to as MACT I, Phase II). MACT I Phase II requires collection and treatment of emissions from certain HVLC-NCG sources. The compliance date for the HVLC-NCG (MACT I, Phase II) requirements was April 17, 2006. The significant modification to operating permit #OP2589-03 is to remove the requirement to vent the brown stock washer emissions through wet scrubbers, as well as to include the HVLC-NCG collection and treatment requirements of 40 CFR 63, Subpart S.

On June 12, 2006, the Department received a complete Title V renewal application from Smurfit-Stone. This application was assigned Operating Permit #OP2589-05. Although no new emissions units have been installed since the issuance of the original Title V operating permit, Smurfit-Stone requested several changes to the operating permit to reflect current operations and/or requirements. These changes include:

- The Micro-Pulsaire Baghouse was previously used to collect sawdust and fines from the chip screening building. Because the mill no longer uses sawdust as a raw material for the pulping process, the suction points for the baghouse were redirected to collect fugitive dust at various chip transfer points within the building. The baghouse is now used solely to increase worker comfort and safety within the building and not to comply with environmental regulations.
- In correspondence dated October 9, 2003, the Department approved the mill's request to burn recycled oil in the units that fire fuel oil at the mill.

- On October 4, 2004, the Department, pursuant to ARM 17.8.322(6), approved the mill's request to burn fuel oil in the No. 3 Lime Kiln that contains sulfur compounds in excess of the level specified in ARM 17.8.322(4).
- Since the compliance date for 40 CFR 63, Subpart MM (MACT II), Smurfit-Stone curtailed operations of Nos. 1 and 2 Lime Kilns and has operated only Nos. 3 and 4 Lime Kilns. In order to decrease natural gas use and operate more efficiently, the mill has been striving to operate the mill using only the No. 3 Lime Kiln. As a result of the efforts to operate the No. 3 Lime Kiln as efficiently as possible, the mill has found that the kiln is able to produce more lime (CaO) than was assumed at the time Stone filed its original Title V application. At that time, production for all four kilns was estimated to be 485 tons of CaO per day, with 180 tons per day assumed for the No. 3 Lime Kiln. With the recent efforts to optimize operation of the No. 3 Lime Kiln, it has been able to produce up to 243 tons of CaO per day, with the expectation that, if necessary, it might be able to achieve 250 tons of CaO per day. This maximized production is still less than the 485 tons of CaO per day of estimated production capacity of all four kilns.
- Several changes have been made to existing pollution control equipment at the mill, including: upgrades to the Nos. 3 and 4 Lime Kiln wet scrubbers to meet the requirements of 40 CFR 63, Subpart MM (MACT II) as identified in the de minimis notification dated August 8, 2003; upgrades to the wet scrubber on the No. 4 Smelt Dissolver as identified in the de minimis notifications dated February 27, 2003 and August 1, 2005; and discontinuance of the operation of the wet scrubbers at the brown stock washers since the HVLC-NCG from the brown stock washers are now collected and burned as identified in Smurfit-Stone's application for a significant modification to the operating permit dated September 30, 2005.
- New applicable requirements apply to this facility as identified in Stone's 40 CFR 63 Subpart MM (MACT II) compliance status notification dated April 2, 2004.
- The Cyclones (EU132) are not control equipment, but inherent process equipment as defined in ARM 17.8.1501(11). All cyclones are operated for material handling purposes and not for compliance with air pollution regulations.
- Smurfit-Stone requested that all references to the following units be removed since these sources are no longer in service: Pin Chip Pile, Pin Chip Digester Cyclone, No. 3 Recovery Boiler, No. 3 Recovery Boiler Dust Tank, No. 3 Recovery Boiler Mix Tank, and the No. 3 Smelt Dissolving Tank. (Note: There are applicable requirements contained in MAQP #2589-13 that apply to these units. The Department intends to amend the MAQP, pursuant to ARM 17.8.764, to delete these requirements since the units are no longer in service.)
- Smurfit-Stone requested that the requirement for emissions of SO₂ from the multi-fuel boiler be limited to 5.70 pounds per hour (lbs/hr) be removed or modified. The requirement was included in the issuance of MAQP #2589-05, which authorized combustion of primary sludge in the multi-fuel boiler. The condition was intended to apply to the SO₂ emissions from the combustion of primary clarifier sludge and not to overall SO₂ emissions from the boiler. The specified compliance method for this condition is monitoring the amount of primary sludge burned and sulfur content of the sludge. Smurfit-Stone asserts that because both of these parameters have individual limitations and monitoring of these parameters is the specified means to demonstrate compliance, the SO₂ limitation is redundant and will not have an effect on boiler emissions. More importantly, as written, Smurfit-Stone feels that if this requirement were mistakenly applied to the boiler rather than to just the primary clarifier sludge, it is in conflicts with other requirements for the multi-fuel boiler which states that SO₂ emissions from the boiler are limited to 429.6 lbs/hr when firing fuel oil.

- The thermal oxidizer has been installed and the gaseous emissions may be ducted to either the oxidizer or the #3 Lime Kiln for oxidation.
- As identified in the mill's correspondence to the Department dated October 18, 2005, the mill believes that the requirements of 40 CFR 61, Subpart E – National Emission Standards for Mercury are not applicable to the Missoula Mill. Smurfit-Stone requests that this be listed as a non-applicable requirement.
- As stated in the Department's correspondence dated January 26, 2004, the requirements of the "Balk-Half" emissions test plan have been completed. Therefore, Smurfit-Stone requests that this section of the operating permit be removed.
- As required by ARM 17.8.1509, Smurfit-Stone submitted proposed Compliance Assurance Monitoring (CAM) plans for applicable emissions units.

All of the above requested modifications are included in Smurfit-Stone's Title V renewal. **Operating Permit #OP2589-05** replaces Operating Permit #OP2589-03.

E. Taking and Damaging Analysis

HB 311, the Montana Private Property Assessment Act, requires analysis of every proposed state agency administrative rule, policy, permit condition or permit denial, pertaining to an environmental matter, to determine whether the state action constitutes a taking or damaging of private real property that requires compensation under the Montana or U.S. Constitution. As part of issuing an operating permit, the Department is required to complete a Taking and Damaging Checklist. As required by 2-10-101 through 105, MCA, the Department has conducted a private property taking and damaging assessment and has determined there are no taking or damaging implications. The checklist was completed on May 27, 2008.

F. Compliance Designation

The Department routinely inspects the Smurfit-Stone Missoula Mill. The last inspection was conducted on March 22, 2006. Smurfit-Stone was in compliance with the terms and conditions of its permits at that time.

However, on March 14, 2007, the Department issued Smurfit-Stone a violation letter for exceedances of NO₂ emission limits for the Multi-fuel Boiler and for failure to operate the NO_x CEM continuously. These violations occurred during the fourth quarter of 2006. On December 11, 2007, the Department initiated an enforcement action against Smurfit-Stone Container for these violations. On March 18, 2008, an executed Administrative Order on Consent (AOC) was issued in order to resolve these violations. The AOC required Smurfit-Stone to pay the Department an administrative penalty in the amount of \$9,200. On April 10, 2008, the Department received a full and final payment from Smurfit-Stone. Upon receipt of this payment, the enforcement action was considered resolved.

SECTION II. SUMMARY OF EMISSION UNITS

A. Facility Process Description

Smurfit-Stone produces unbleached linerboard products from the combination of sawmill residuals (sawdust and chips), roundwood, and recycled fiber. Pulp is produced in batch and continuous pulping digesters using the Kraft (sulfate) cooking process. Recycled fiber is also recovered from post-consumer paper sources on the recycling fiber line. Other major processes include raw materials handling, steam and energy production, chemical recovery, paper production, and finished product handling and shipping. Smurfit-Stone is divided into five major process areas: the Pulp, Chip Dock, and Recycled Fiber Department; the Paper Mill Department; the Power, Recovery, and Reausticizing Department; the Environmental and Technical Department; and the Engineering and Maintenance Department.

The Department has determined the applicable requirements for the Title V permit from the Administrative Rules of Montana Title 17, Chapter 8, the federally enforceable MAQP, and any applicable federal regulations, such as NSPS or MACT requirements, as well as any applicable requirements from the Missoula County regulations. For those conditions that did not have any or adequate compliance demonstrations, the Department determines the appropriate compliance demonstration as required by ARM 17.8.1212 and ARM 17.8.1213.

B. Emission Units and Pollution Control Device Identification

Smurfit-Stone consists of five departments each containing several emitting units to produce the linerboard product. A complete list of emitting units is contained in Section II of the permit. Also, the Department has designated two areas of the permit as Facility Wide-General (Section III.A) and Mill-Wide Permit Conditions (Section III.B). The Facility-Wide-General section is defining, in general, the regulations that apply to the facility and the general reporting requirements for the facility. The Mill-Wide Permit Condition section specifically defines permit conditions, compliance demonstrations, recordkeeping, and reporting requirements that apply to the whole facility and not individual emitting units.

Pulp, Chip Dock, and Recycled Fiber Department

The Pulp, Chip Dock, and Recycled Fiber Department consists of the wood handling area, the pulping process, the brownstock washing and screening, and the recycled fiber area. The wood handling area includes the sawdust handling units, chip handling units, and storage piles. These units process and store wood in the form of chips, sawdust, chip screened fines, and hog fuel at the facility.

The pulping process dissolves enough lignin to release the cellulose fiber in a form that renders them useful for the type of paper product to be made. The emission units involved in the pulping process include 8 batch digesters and 3 continuous digesters. The digesters use the Kraft process to cook the wood to produce papermaking quality fiber for processing on the paper machines.

The brownstock washing and screening process involves the base stock brownstock washers, CB washers, PC washers, and top stock washing emitting units. The general operations in brownstock washing and screening include hot stock refining to abrade the softened chips; screen the pulp to remove knots and incompletely cooked chips; reject refining rejects to the screening process, wash to recover spent cooking liquor, and thicken chips by removing water from the pulp.

Smurfit-Stone also uses post-consumer paper sources and reduces the paper into pulp for the facility. The remaining emitting units involved with this Department are the non-condensable gas system and the cyclones and chip thickness baghouse to control air emissions.

Power, Recovery, and Reausticizing Department

The Power, Recovery, and Reausticizing Department provides steam, process water, and electricity to the facility. This Department includes the evaporators and steam stripper, recovery boilers, steam generation, recausticizing area-liquid generation, recausticizing area-lime recovery, and any additional recovery area operations. The Kraft process includes evaporating water out of the black liquor until the solids are at a high enough concentration to support their own combustion in the recovery boilers. The condensates from the evaporators, turpentine and digester process areas are steam stripped to produce clean condensates for recycling. The stripper off-gas is routed to the thermal oxidizer for combustion. The emitting units used in this process include the evaporators, steam stripper, and the thermal oxidizer.

The heavy black liquor, fuel oil, and natural gas can all be burned in the two recovery boilers. The particulate emissions are controlled by electrostatic precipitators (ESPs) and the SO₂, opacity, and total reduced sulfur compounds are measure by CEMs on each recovery boiler. The molten smelt flows from the recovery boilers into smelt dissolving tanks, where it is dissolved in weak wash from the recausticizing cycle which results in a green liquor. The green liquor is then slaked with lime resulting in a white liquor that is reused as cooking liquor. Particulate emissions from the smelt dissolving tanks are controlled by wet scrubbers. The emitting units involved include the recovery boilers, the smelt dissolving tanks, the lime slakers, white and black liquor handling, and hog fuel handling.

The emitting units used for steam production for pulp and papermaking are the recovery boilers, the Power Boiler, and the Multi-fuel Boiler. The Power Boiler operates on natural gas, which constitutes the emission controls needed on this unit. The Multi-fuel Boiler can operate on OCC rejects, fuel oil, recycled oil, hog fuel, dewatered sludge, and natural gas. A wet venturi scrubber is used to control emissions from the Multi-fuel Boiler. Also, Smurfit-Stone operates CEMS for NO_x, SO₂, and oxygen on the Multi-fuel Boiler.

The green liquor that is sent to the lime slakers is treated and the precipitate is lime mud. The lime mud is diluted with water, filtered, and sent to the lime kilns. In the lime kilns it is dried then heated to the calcining slaking operation. The calcined product is the quicklime for the slaking operation. The lime kilns are fired with natural gas and/or fuel oil.

Smurfit-Stone has established correlation equations for the #4 Recovery Boiler and the #5 Recovery Boiler. These equations correlate the particulate emissions and the opacity from these units. The equations are used to determine particulate mass emissions from the #4 Recovery Boiler and the #5 Recovery Boiler. The applicable conditions are contained in Section V.A and V.B of the permit. The equations are listed in the following table.

Emitting Unit	Stack Exit Air Flow (dscfm)	Grain Loading (gr/dscf)
EU002-#4 Recovery Boiler	$0.2322 * (\text{Total Air}) + 14637$	$[-0.1303 * \ln(1 - \text{Opacity})] + 0.0008$
EU003-#5 Recovery Boiler	$0.2823 * (\text{Total Air}) - 7330$	$[-0.237 * \ln(1 - \text{Opacity})] + 0.0006$

Paper Mill Department

The Paper Mill Department contains Smurfit-Stone's three paper machines and is where the production of linerboard takes place. The Kraft pulp and Recycled pulp are mixed in the buffer or machine chests at one of the three paper machines. The paper machines use various additives to enhance linerboard properties and machine operation. The emitting units involved include the paper machines, the starch handling, clay handling, the salt cake/lime unloading, and chemical storage tanks. The emissions are controlled with baghouses.

Environmental and Technical Department

The Environmental and Technical Department is responsible for the mill laboratories and compliance with regulatory requirements. The major emitting unit included in this Department is the effluent treatment system. The permit requires a Method 9 be conducted to demonstrate compliance with the opacity demonstration on this source. It should be noted that the physical properties of the effluent treatment system (warm/hot water and cool/cold air) have the potential to create extremely foggy conditions.

Engineering and Maintenance Department

The Engineering and Maintenance Department is responsible for the design and construction of civil, mechanical, electrical, and process projects. The emitting units from this Department include unpaved roads, any welding/blasting, part cleaning, paint booths, liquid fuel handling, and CFC recycling.

C. Categorically Insignificant Sources/Activities

Pursuant to ARM 17.8.1201(22)(a), an insignificant emission unit means any activity or emission unit located within a source that: (i) has a potential to emit less than 5 tons per year of any regulated pollutant; (ii) has a potential to emit less than 500 pounds per year of lead; (iii) has a potential to emit less than 500 pounds per year of hazardous air pollutants listed pursuant to Section 7412 (b) of the FCAA; and (iv) is not regulated by an applicable requirement, other than a generally applicable requirement that applies to all emission units subject to Subchapter 12.

The following table of insignificant sources and/or activities was provided by Smurfit-Stone. Because there are no requirements to update such a list, the emission units and/or activities may change from those specified in the table.

Emission Unit ID	Description
IEU01	Chip Fines to Hog Fuel (& Sawdust Fines)
IEU02	Shower Water Tank Stack
IEU03	Black Liquor Charge Tank
IEU04	Liquor Filter Vent
IEU05	No. 1 Filtrate Tank Vent (SD Filtrate)
IEU06	No. 4 Evaporator Feed Tank
IEU07	Spill Tank in Batch Area
IEU08	Pins Kamyr Low Pressure Feeder Relief Cyclone
IEU09	M&D Digester Chip Feeder Vent
IEU10	Kamyr Chip Bin Vent
IEU11	Recycled Fiber Bale Storage
IEU12	Turpentine Storage Tank
IEU13	No. 5 Recovery Building Roof Steam Vents
IEU14	Coke Storage Tank
IEU15	No.6 Fuel Oil Tank
IEU16	Dregs Wash Tank
IEU17	No. 1 Green Liquor Clarifier Tank Vents
IEU18	No. 1 Green Liquor Storage Tank Vents
IEU19	No. 2 Green Liquor Clarifier Tank Vents
IEU20	Raw Green Liquor Storage Tank Vent
IEU21	No. 3 Mud Washer Tank Vents
IEU22	No. 1 Mud Washer Tank Vents
IEU23	No. 1 & No. 2 Mud Filter Hood
IEU24	No. 1 Mud Storage Tank – Serves No. 1 & No. 2 Lime Kilns

IEU25	No. 2 Mud Washer Tank Vent
IEU26	No. 2 Mud Storage Tank
IEU27	No. 3 Kiln Mud Filter Hood
IEU28	No. 3 Lime Kiln Mud Filter Vacuum Pump Exhaust Stack
IEU29	No. 3 Mud Storage Tank Vents
IEU30	No. 4 Lime Kiln Mud Filter Hood
IEU31	No. 4 Lime Kiln Mud Filter Vacuum Pump Exhaust Stack
IEU32	Warehouse/Shipping Dock Roof Vents
IEU33	Diesel Tank Vent
IEU34	Gasoline Tank Vent
IEU35	Paved Road Fugitives

SECTION III. PERMIT CONDITIONS

A. Emission Limits and Standards

Emission limits and standards in the Title V operating permit were established by Smurfit-Stone's Montana Air Quality Permit (#2589-13), NSPS requirements, NESHAP requirements, and MACT requirements. The limitations are contained in the permit, which is organized by process and emitting unit.

B. Monitoring Requirements

ARM 17.8.1212(1) requires that all monitoring and analysis procedures or test methods required under applicable requirements be contained in operating permits. In addition, when the applicable requirement does not require periodic testing or monitoring, periodic monitoring must be prescribed that is sufficient to yield reliable data from the relevant time period that is representative of the source's compliance with the permit.

The requirements for testing, monitoring, recordkeeping, reporting, and compliance certification sufficient to assure compliance do not require the permit to impose the same level of rigor for all emissions units. Furthermore, they do not require extensive testing or monitoring to assure compliance with the applicable requirements for emissions units that do not have significant potential to violate emission limitations or other requirements under normal operating conditions. When compliance with the underlying applicable requirement for a insignificant emissions unit is not threatened by lack of regular monitoring and when periodic testing or monitoring is not otherwise required by the applicable requirement, the status quo (**i.e., no monitoring**) will meet the requirements of ARM 17.8.1212(1). Therefore, the permit does not include monitoring for insignificant emission units.

The permit includes periodic monitoring or recordkeeping for each applicable requirement. The information obtained from the monitoring and recordkeeping will be used by the permittee to periodically certify compliance with the emission limits and standards. However, the Department may request additional testing to determine compliance with the emission limits and standards.

C. Test Methods and Procedures

The operating permit may not require testing for all sources if routine monitoring is used to determine compliance, but the Department has the authority to require testing if deemed necessary to determine compliance with an emission limit or standard. In addition, the permittee may elect to voluntarily conduct compliance testing to confirm its compliance status.

Smurfit-Stone is required to conduct testing in accordance with the permit. The permit contains testing and monitoring on a monthly, quarterly, and annual basis and only on an as-required basis in some cases. Smurfit-Stone is also required to conduct testing to determine the methanol mass in accordance with 40 CFR 63, Subpart S. The testing will be completed in accordance with the National Council for Air and Stream Improvement, Inc. (NCASI) 94.03 Direct Injection Test Methods. Smurfit-Stone will measure methanol mass using the factors from the testing in a 60-day rolling average. This testing shall be conducted initially and once every 5 years after the initial test. This permit also requires Method 1-5 and Method 7-9 tests to be performed. These testing requirements were established by the Department's testing policy and by the MAQP.

D. Recordkeeping Requirements

Smurfit-Stone is required to keep all records listed in the operating permit as a permanent business record for at least five years following the date of the generation of the record.

E. Reporting Requirements

Reporting requirements are included in the permit for each emission unit and Section VIII of the operating permit "General Conditions" explains the reporting requirements. However, Smurfit-Stone is required to submit monthly, quarterly, semi-annual, and annual monitoring reports to the Department and to annually certify compliance with the applicable requirements contained in the permit. The reports must include a list of all emission limit and monitoring deviations, the reason for any deviation, and the corrective action taken as a result of any deviation. The Department will work with Smurfit-Stone to ensure that multiple submittals of the same data do not occur in most situations.

To eliminate redundant reporting, a source may reference previously submitted reports (with at least the date and subject of the report) in the semi-annual and annual reports instead of resubmitting the information in monthly, quarterly, and/or other reports.

Also, Smurfit-Stone was involved in a settlement in federal court of MT-CHEER et. al. vs Smurfit-Stone Container (Civil Action No. CV-96-24-M-CCL), which contains reporting requirements for Smurfit-Stone Container.

F. Public Notice

In accordance with ARM 17.8.1232, a public notice was published in the *The Missoulian* on or before November 19, 2008. The Department provided a 30-day public comment period on the draft operating permit from November 19, 2008 to December 19, 2008. ARM 17.8.1232 requires the Department to keep a record of both comments and issues raised during the public participation process. The comments and issues received by December 19, 2008 will be summarized, along with the Department's responses, in the following table. All comments received during the public comment period will be promptly forwarded to Smurfit-Stone so they may have an opportunity to respond to these comments as well.

Summary of Public Comments

Person/Group Commenting	Comment	Department Response

G. Draft Permit Comments

Summary of Permittee Comments

Permit Reference	Permittee Comment	Department Response

Summary of EPA Comments

Permit Reference	EPA Comment	Department Response

SECTION IV. NON-APPLICABLE REQUIREMENT ANALYSIS

Requirements Not Identified as Non-Applicable

Pursuant to ARM 17.8.1221, Smurfit-Stone requested a permit shield for all non-applicable regulatory requirements and regulatory orders for both the facility and for certain emission units. The Department has determined that the requirements identified in the permit application for the individual emission units are non-applicable. These requirements are contained in the permit in Section VII, Non-applicable Requirements.

The following table outlines those requirements that Smurfit-Stone had identified as non-applicable in the initial permit application, but were not included in the operating permit as non-applicable. The table includes both the applicable requirement and reason that the Department did not identify this requirement as non-applicable.

Applicable Requirement	Reason for Not Including
40 CFR 61, Subpart A - General Provisions 40 CFR 64 Compliance Assurance Monitoring	These federal regulations consist of an applicability statement. These regulations may not be applicable to the source at this time; however, these regulations may become applicable during the life of the permit.
40 CFR 50 National Primary and Secondary Ambient Air Quality Standards 40 CFR 51 Requirements for Preparation, Adoption, and Submittal of the Implementation Plan 40 CFR 71 Federal Operating Permit Program ARM 17.8.101 Definitions ARM 17.8.102 & 103 Incorporation by Reference ARM 17.8.130 Notice of Violation ARM 17.8.142 Rehearing Procedure Reviews ARM 17.8.201 Definitions ARM 17.8.202 Incorporation by Reference ARM 17.8.301 Definitions ARM 17.8.302 Incorporation by Reference ARM 17.8.321(1) Definitions	These rules do not have specific requirements for major sources because they are requirements for EPA or state and local authorities. Furthermore, these rules can be used as authority to impose specific requirements on a major source.
40 CFR 52, Subpart A Prevention of Significant Deterioration 40 CFR 52, Subpart BB Approval and Promulgation of Montana State Implementation Plan Rules	These rules do not have specific requirements for major sources because they are requirements for EPA or state and local authorities. Furthermore, these rules can be used as authority to impose specific requirements on a major source.
40 CFR 70 State Operating Permit Programs ARM 17.8.111 Circumvention ARM 17.8.210 Ambient Air Quality Standards for SO ₂ ARM 17.8.211 Ambient Air Quality Standards for NO _x ARM 17.8.212 Ambient Air Quality Standards for CO ARM 17.8.213 Ambient Air Quality Standards for Ozone ARM 17.8.214 Ambient Air Quality Standards for H ₂ S ARM 17.8.220 Ambient Air Quality Standards for Settled Particulate Matter ARM 17.8.221 Ambient Air Quality Standards for Visibility ARM 17.8.222 Ambient Air Quality Standards for Pb ARM 17.8.223 Ambient Air Quality Standards for PM ₁₀ ARM 17.8.230 Fluoride in Forage	These rules are always applicable to a major source and may contain specific requirements for compliance.
ARM 17.8.131 Appeal to Board of Environmental Review ARM 17.8.140 Rehearing Procedures Forms ARM 17.8.141 Rehearing Procedures Filings ARM 17.8.325 Motor Vehicles ARM 17.8.340 Standards of Performance for New Stationary Sources	These are procedural rules that have specific requirements that are always relevant to a major source during the permit span.

SECTION V. FUTURE PERMIT CONSIDERATIONS

A. MACT Standards

Smurfit-Stone is currently subject to 40 CFR 63, Subpart S- National Emissions Standards for Hazardous Air Pollutants (NESHAP) for the Pulp and Paper Industry (also referred to as MACT I for pulp and paper mills) and 40 CFR 63, Subpart MM – NESHAP for Chemical Recovery Combustion Sources at Kraft, Soda, Sulfite, and Stand-Alone Semichemical Pulp Mills (also referred to as MACT II for pulp and paper mills).

This facility is also subject to 40 CFR 63, Subpart DDDDD –NESHAP for Industrial, Commercial, and Institutional Boilers and Process Heaters (also referred to as the Boiler MACT). However, on July 30, 2007, the Court of Appeals for the District of Columbia Circuit issued its mandate in *NRDC v. EPA*, vacating and remanding EPA's Boiler MACT. This rule was subsequently removed from the ARM in October 2008 and, as such, does not apply to this facility at this time.

B. NESHAP Standards

As of November 19, 2008, the only NESHAP standards that Smurfit-Stone is currently subject to include Subpart M - Asbestos. The Department is unaware of any proposed or pending NESHAP standard that may be applicable to Smurfit-Stone.

C. NSPS Standards

As of November 19, 2008, the only NSPS standards that Smurfit-Stone is currently subject to include 40 CFR 60, Subpart D – Standards of Performance for Fossil-Fuel-Fired Steam Generators for Which Construction is Commenced After August 17, 1971 and 40 CFR 60, Subpart BB – Standards of Performance for Kraft Pulp Mills. The Department is unaware of any proposed or pending NSPS standard that may be applicable to Smurfit-Stone.

D. Risk Management Plan

As of November 19, 2008, Smurfit-Stone does not exceed the minimum threshold quantities for any regulated substance listed in 40 CFR 68.115 for any facility process. Consequently, Smurfit-Stone is not required to submit a Risk Management Plan.

If a facility has more than a threshold quantity of a regulated substance in a process, the facility must comply with 40 CFR Part 68 requirements no later than June 21, 1999; three years after the date on which a regulated substance is first listed under 40 CFR 68.130; or the date on which a regulated substance is first present in more than a threshold quantity in a process, whichever is later.

E. Compliance Assurance Monitoring (CAM)

In accordance with 40 CFR Part 64, and ARM Title 17, Chapter 8, Subchapter 15, CAM applies to each pollutant-specific emitting unit at a major stationary source if the affected unit is subject to a pollutant specific emission limitation or standard; the unit uses a control device to achieve compliance with the applicable limitation or standard; and the unit has a pre-control potential to emit (PTE) the regulated pollutant in an amount that exceeds 100% of the Title V major source threshold. The following table summarizes the emission unit, pollutants, and control equipment subject to CAM:

Emissions Unit	Pollutant(s)	Control Equipment
No. 1 Lime Kiln (EU011)	Particulate Matter PM ₁₀	Wet Venturi Scrubber
No. 2 Lime Kiln (EU012)	Particulate Matter PM ₁₀	Wet Venturi Scrubber
No. 3 Lime Kiln (EU013)	Particulate Matter PM ₁₀	Wet Venturi Scrubber
No. 4 Lime Kiln (EU014)	Particulate Matter PM ₁₀	Wet Venturi Scrubber
No. 4 Recovery Boiler (EU002)	Particulate Matter PM ₁₀	Electrostatic Precipitator
No. 5 Recovery Boiler (EU003)	Particulate Matter PM ₁₀	Electrostatic Precipitator
No. 4 Smelt Dissolver (EU016)	Particulate Matter PM ₁₀	Wet Venturi Scrubber
No. 5 Smelt Dissolver (EU017)	Particulate Matter PM ₁₀	Wet Venturi Scrubber
Multi-Fuel Boiler (EU021)	Particulate Matter PM ₁₀	Two Parallel Wet Venturi Scrubbers